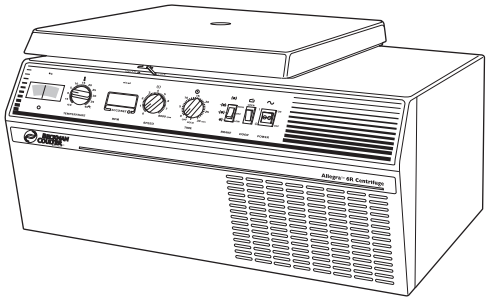
BECKMAN COULTER®

Allegra® 6 Series and Spinchron™ R Centrifuges

Instruction Manual



Symbol Simbolo Symbol 記号 Symbole 符号 Símbolo	Title / Titel / Titre / Titulo / Titolo / 名称 / 名称
	Dangerous voltage Gefährliche elektrische Spannung Courant haute tension Voltaje peligroso Pericolo: alta tensione 危険電圧 危险电压
	Attention, consult accompanying documents Achtung! Begleitpapiere beachten! Attention, consulter les documents joints Atención, consulte los documentos adjuntos Attenzione: consultare le informazioni allegate 注意、添付資料を参照のこと 注意，请参阅附带的文件
	On (power) Ein (Netzverbindung) Marche (mise sous tension) Encendido Acceso (sotto tensione) 入（電源） 开 （电源）
	Off (power) Aus (Netzverbindung) Arrêt (mise hors tension) Apagado Spento (fuori tensione) 切（電源） 关 （电源）
	Protective earth (ground) Schutzleiteranschluß Liaison à la terre Puesta a tierra de protección Collegamento di protezione a terra 保護アース（接地） 保护接地
	Earth (ground) Erde Terre Tierra Scarica a terra アース（接地） 接地

SAFETY NOTICE

This safety notice summarizes information basic to the safe operation of the equipment described in this manual. The international symbol displayed above is a reminder that all safety instructions should be read and understood before installation, operation, maintenance, or repair of this centrifuge. When you see the symbol on other pages, pay special attention to the safety information presented. Observance of safety precautions will also help to avoid actions that could damage or adversely affect the performance of the centrifuge.

Safety During Installation and/or Maintenance

This centrifuge weighs 51.7 kg/114.0 lb (nonrefrigerated benchtop), 75.8 kg/167.0 lb (refrigerated benchtop), or 90.3 kg/199.0 lb (refrigerated kneewell). DO NOT attempt to lift or move it without assistance from another person.

Be sure to use the anchoring system to secure the centrifuge in place. The anchoring system is designed to reduce the possibility of injury or damage that could result from centrifuge movement in the event of a major rotor mishap.

Any servicing of this equipment that requires removal of any covers can expose parts which involve the risk of electric shock or personal injury. Make sure that the power switch is off and the centrifuge is disconnected from the main power source, and refer such servicing to qualified personnel.

Do not replace any centrifuge components with parts not specified for use on this instrument.

Electrical Safety

To reduce the risk of electrical shock, this equipment uses a three-wire electrical cord and plug to connect the centrifuge to earth-ground. To preserve this safety feature:

- Make sure that the matching wall outlet receptacle is properly wired and earth-grounded. Check that the line voltage agrees with the voltage listed on the name-rating plate affixed to the centrifuge.
- Never use a three-to-two wire plug adapter.
- Never use a two-wire extension cord or a two-wire non-grounding type of multiple-outlet receptacle strip.

Do not place containers holding liquid on or near the chamber door. If they spill, liquid may get into the centrifuge and damage electrical or mechanical components.

Safety Against Risk of Fire

Certain electrical circuits within this equipment are protected by fuses against overcurrent conditions. For continued protection against the risk of fire, replace only with the same type and rating specified.

This centrifuge is not designed for use with materials capable of developing flammable or explosive vapors. Do not centrifuge such materials (such as chloroform or ethyl alcohol) in this centrifuge nor handle or store them within the 30-cm (1-ft) area surrounding the centrifuge.

Mechanical Safety

For safe operation of the equipment, observe the following:

- Use only the rotors and accessories designed for use in this centrifuge.
- Before starting the centrifuge, make sure that the rotor tie-down nut (or rotor lid knob) is securely fastened.
- Do not exceed the maximum rated speed of the rotor in use.
- NEVER attempt to slow or stop the rotor by hand.
- Do not lift or move the centrifuge while the rotor is spinning.
- NEVER attempt to override the door interlock system while the rotor is spinning.
- Maintain a 7.6-cm (3-in.) clearance envelope around the centrifuge while it is running. During operation you should come within the envelope only to adjust instrument controls, if necessary. Never lean on the centrifuge or place items on the centrifuge while it is operating.

Chemical and Biological Safety

Normal operation may involve the use of solutions and test samples that are pathogenic, toxic, or radioactive. Such materials should not be used in this centrifuge, however, unless *all necessary safety precautions are taken*.

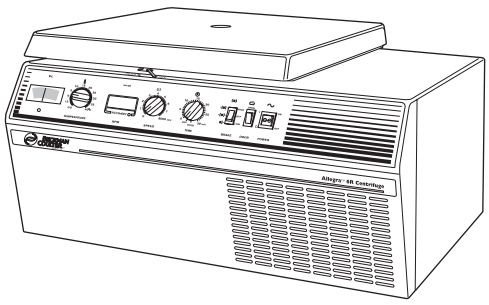
- Observe all cautionary information printed on the original solution containers prior to their use.
- Handle body fluids with care because they can transmit disease. No known test offers complete assurance that they are free of micro-organisms. Some of the most virulent—Hepatitis (B and C) and HIV (I–V) viruses, atypical mycobacteria, and certain systemic fungi—further emphasize the need for aerosol protection. Handle other infectious samples according to good laboratory procedures and methods to prevent spread of disease. Because spills may generate aerosols, observe proper safety precautions for aerosol containment. Do not run toxic, pathogenic, or radioactive materials in this centrifuge without taking appropriate safety precautions. Biosafe containment should be used when Risk Group II materials (as identified in the World Health Organization *Laboratory Biosafety Manual*) are handled; materials of a higher group require more than one level of protection.
- Dispose of all waste solutions according to appropriate environmental health and safety guidelines.

It is your responsibility to decontaminate the centrifuge and accessories before requesting service by Beckman Coulter Field Service.

BE-IM-9
February 2008

Allegra® 6 Series and Spinchron™ R Centrifuges

Instruction Manual



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Contents

Page

INTRODUCTION

Certification v
Scope of Manual v
Conventions vi
Notes, Cautions, and Warnings vi
CFC-Free Centrifugation vii
Radio Interference vii
Canadian Regulations viii
Recycling Label viii

SECTION 1: DESCRIPTION

Centrifuge Function and Specifications 1-1
Centrifuge Function 1-1
Allegra 6 and Spinchron Models 1-1
Specifications 1-3
Available Rotors 1-4
Safety Features 1-5
Name Rating Plate 1-6
Chassis 1-6
Housing 1-6
Door 1-6
Rotor Chamber 1-6
Drive 1-7
Refrigeration System 1-7
Controls and Indicators 1-8
Control Panel 1-8

SECTION 2: INSTALLATION REQUIREMENTS

Space and Location Requirements 2-1
Electrical Requirements 2-2
Test Run 2-4

SECTION 3: OPERATION

Run Procedures 3-1
Preparation and Loading 3-2
Starting a Run 3-4
Stopping a Run 3-6

Page

SECTION 4: TROUBLESHOOTING

Shutdown/No-Start Diagnostics 4-1
Other Possible Problems 4-2
Emergency Access 4-4

SECTION 5: CARE AND MAINTENANCE

General Maintenance 5-2
Cleaning 5-2
Decontamination 5-3
Sterilization and Disinfection 5-3
Tube Breakage 5-3
Speed Calibration 5-4
Speed Verification 5-4
Speed Knob Adjustment 5-4
Temperature Knob Adjustment 5-6
Storage and Transport 5-7
Storage 5-7
Returning a Centrifuge 5-7
Supply List 5-8
Replacement Parts 5-8
Supplies 5-8

Warranty

Illustrations and Tables

Figure 1-1. Allegra 6 Centrifuges 1-2
Figure 1-2. Interior View of the Centrifuge 1-7
Figure 1-3. The Control Panel (Nonrefrigerated Model) 1-8
Figure 1-4. The Control Panel (Refrigerated Models) 1-9

Figure 2-1. Centrifuge Dimensions 2-3

Figure 4-1. Emergency Access 4-5

Table 4-1. Shutdown/No-Start Diagnostics 4-2
Table 4-2. Troubleshooting Chart 4-3

Introduction

CERTIFICATION

To ensure full system quality, Beckman Coulter Allegra® 6 series and Spinchron™ R centrifuges have been manufactured in an ISO 9001 or 13485 facility. They have been designed and tested to be compliant (when used with Beckman Coulter rotors) with the laboratory equipment requirements of applicable regulatory agencies. Declarations of conformity and certificates of compliance are available at www.beckmancoulter.com.

SCOPE OF MANUAL

This manual is designed to familiarize you with the Allegra 6 series and Spinchron R centrifuges, their functions, specifications, operation, and routine operator care and maintenance. We recommend that you read this entire manual, especially the SAFETY NOTICE and all safety-related information, before operating the centrifuge or performing instrument maintenance.

NOTE

The descriptions and instructions are the same for Allegra 6R and Spinchron R centrifuges. References in this manual to an Allegra 6R model also apply to the Spinchron R model.

- Section 1 contains system specifications and a brief physical and functional description of the centrifuge, including the operating controls and indicators.
- Section 2 provides instructions for installing and connecting the centrifuge.
- Section 3 contains centrifuge operating procedures.

- Section 4 lists possible malfunctions, together with probable causes and suggested corrective actions.
- Section 5 contains procedures for routine operator care and maintenance, as well as a brief list of supplies and replacement parts.

NOTE

If the centrifuge is used in a manner other than specified in this manual, the safety and performance of this equipment could be impaired. Further, the use of any equipment other than that recommended by Beckman Coulter has not been evaluated for safety. Use of any equipment not specifically recommended in this manual and/or the appropriate rotor manual is the sole responsibility of the user.

CONVENTIONS

Certain symbols are used in this manual to call out safety-related and other important information. These international symbols may also be displayed on the centrifuge and are reproduced and described below and on the inside of the front cover.

NOTES, CAUTIONS, AND WARNINGS

NOTE

Used to call attention to important information that should be followed during installation, use, or servicing of this equipment.

CAUTION

Used to indicate a potentially hazardous situation which, if not avoided, may result in minor or moderate injury and/or mechanical damage. It is also used to alert against unsafe practices.

WARNING

Used whenever an action or condition may potentially cause personal injury or loss of life. Mechanical damage may also result.

WARNING

Indicates high voltage or risk of electric shock. Refer servicing of all areas displaying either symbol to service personnel.

CFC-FREE CENTRIFUGATION

To ensure minimal environmental impact, no CFCs are used in the manufacture or operation of Allegra 6 series and Spinchron R centrifuges.

RADIO INTERFERENCE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause interference to radio communications. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his own expense.

CANADIAN REGULATIONS

This equipment does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe A prescrites dans le reglement sur le brouillage radioelectrique édicté par le Ministère des Communications du Canada.

RECYCLING LABEL

Note: On the instrument, the triangle background is yellow rather than gray.

This symbol is required in accordance with the Waste Electrical and Electronic Equipment (WEEE) Directive of the European Union. The presence of this marking on the product indicates.

1) The device was put on the European market after August 13, 2005 and

2) The device is not to be disposed via the municipal waste collection system of any member state of the European Union.

It is very important that customers understand and follow all laws regarding the proper decontamination and safe disposal of electrical equipment. For Beckman Coulter products bearing this label please contact your dealer or local Beckman Coulter office for details on the take back program that will facilitate the proper collection, treatment, recovery, recycling and safe disposal of the device.

1
Description

CENTRIFUGE FUNCTION AND SPECIFICATIONS

CENTRIFUGE FUNCTION

The Beckman Coulter Allegra 6 centrifuge generates centrifugal forces required for a wide variety of applications. Together with the Beckman Coulter rotors designed for use in this centrifuge, the centrifuge applications include:

- Routine processing such as sample preparations, pelleting, extractions, purifications, concentrations, phase separations, receptor binding, and column centrifugations.
- Processing large numbers of small-volume samples in multiwell plates for concentrating tissue-culture cells, cloning and replicate studies, in-vitro cytotoxicity studies, receptor binding, and genetic engineering experimentation.
- Virus isolation.
- Rapid sedimentation of protein precipitates, large particles, and cell debris.
- Preparation of subcellular organelles such as mitochondria, granules, and crude microsomes.
- Binding studies and separation of whole blood.
- Cell isolation.

ALLEGRA 6 AND SPINCHRON MODELS

The Allegra 6 (see Figure 1-1) comes in three models and the Spinchron in one:

- A nonrefrigerated compact bench model (no Spinchron model)
- A refrigerated compact bench model
- A refrigerated kneewell model (no Spinchron model)

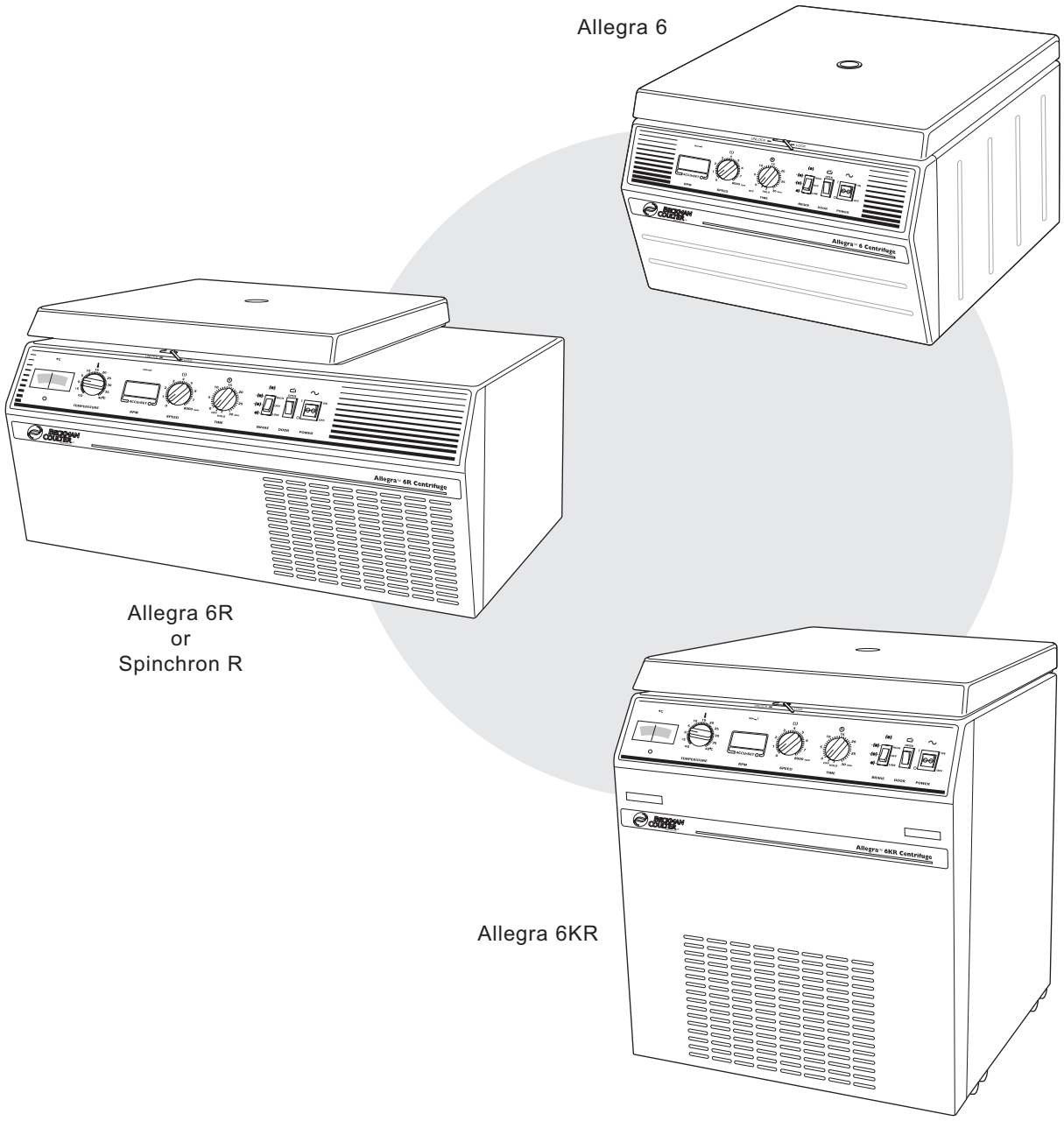


Figure 1-1. Allegra 6 Centrifuges

SPECIFICATIONS

Only values with tolerances or limits are guaranteed data. Values without tolerances are informative data, without guarantee.

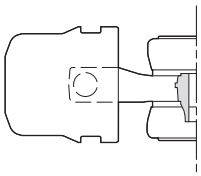
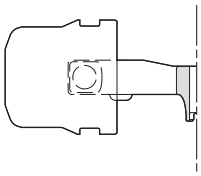
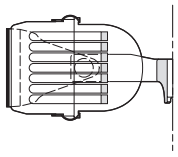
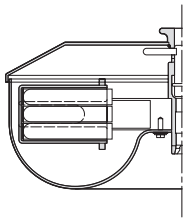
	Allegra 6	*Allegra 6R/ Spinchron R*	*Allegra 6KR*
Speed			
Set* (in 200-rpm increments)	0 to 8000 rpm	0 to 8000 rpm	0 to 8000 rpm
Display	±30 rpm of actual	±30 rpm of actual	±30 rpm of actual
Set time			
Timed run	up to 30 min	up to 30 min	up to 30 min
Continuous run	HOLD	HOLD	HOLD
Temperature			
Temperature setting (refrigerated models only)	not applicable	–10 to 40°C	–10 to 40°C
Normal operating range (refrigerated models only)	not applicable	–5 to 25°C	–5 to 25°C
Temperature display (refrigerated models only)	not applicable	actual chamber temp ±2°C	actual chamber temp ±2°C
Ambient temperature range	10 to 35°C	10 to 35°C	10 to 35°C
Ambient temperature range for optimum operation	10 to 25°C	10 to 25°C	10 to 25°C
Humidity restrictions	<95% (noncondensing)	<95% (noncondensing)	<95% (noncondensing)
Dimensions			
Width	54.6 cm (21.5 in.)	76 cm (30 in.)	54.6 cm (21.5 in.)
Depth (overall)	66.0 cm (26.0 in.)	66 cm (26 in.)	66.0 cm (26.0 in.)
Depth (at base)	58.0 cm (23.0 in.)	58.4 cm (23.0 in.)	58.4 cm (23.0 in.)
Height, door closed	40.6 cm (16.0 in.)	39.4 cm (15.5 in.)	67.3 cm (26.5 in.)
Height, door open	96.8 cm (38.1 in.)	94.0 cm (37.0 in.)	125.7 cm (49.5 in.)
Weight	51.7 kg (114.0 lb)	75.8 kg (167.0 lb)	90.3 kg (199.0 lb)
Ventilation clearances (sides and rear)	7.6 cm (3.0 in.)	7.6 cm (3.0 in.)	7.6 cm (3.0 in.)
Electrical requirements	120 VAC, 8 A, 60 Hz	120 VAC, 12 A, 60 Hz	120 VAC, 12 A, 60 Hz
	230 VAC, 4 A, 50 Hz	230 VAC, 8 A, 50 Hz	230 VAC, 8 A, 50 Hz
	100 VAC, 10 A, 50/60 Hz	200 VAC, 10 A, 50/60 Hz	200 VAC, 10 A, 50/60 Hz
Electrical supply	Class I	Class I	Class I
Maximum heat dissipation into room under steady-state conditions	3073 Btu/hr (0.9 kW)	5425 Btu/hr (1.59 kW)	5425 Btu/hr (1.59 kW)
Noise level 0.91 m (3 ft) in front of centrifuge	<65 dBa	<65 dBa	<65 dBa
Installation (overvoltage) category	II	II	II
Pollution degree	2†	2†	2†

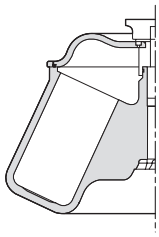
* Maximum rated speed (depending on rotor in use) can be obtained only at nominal voltages (120 V for 60 Hz; 230 V for 50 Hz; 100 V for 50/60 Hz).

† Normally only nonconductive pollution occurs; occasionally, however, a temporary conductivity caused by condensation must be expected.

AVAILABLE ROTORS

Refer to the appropriate rotor manuals for complete rotor descriptions.

Rotor Profile and Description	Max RPM	Max RCF (× *g*)	Max Capacity	Rotor Manual Number
GH-3.8A Horizontal (4 place)				GS6-TB-017
 Buckets (r_{max} = 204 mm)	3750	3210	4 × 750 mL	
Carriers (r_{max} = 163 mm)	3250	1924	4 × 192 mL	
GH-3.8 Horizontal (4 place)				GS6-TB-003
 Buckets (r_{max} = 204 mm)	3750	3210	4 × 750 mL	
Carriers (r_{max} = 163 mm)	3250	1924	4 × 192 mL	
PTS-2000 Horizontal (4 place)				SP-TB-008
 Sector base, 100-mm tube (r_{max} = 170 mm)	3250	2010	7 × 10 mL (each carrier)	
Sector base, 75-mm tube (r_{max} = 160 mm)	3250	1890	7 × 7 mL (each carrier)	
Tube base, 16-mm tube (r_{max} = 176 mm)	3250	2080	20 × 10 mL (each carrier)	
Tube base, 13-mm tube (r_{max} = 176 mm)	3250	2080	20 × 7 mL (each carrier)	
Micro Plus carriers (r_{max} = 163 mm)	3250	1920	4 × 192 mL	
GH-4.7 Horizontal (4 place)				GS-TB-024
 (r_{max} = 182 mm)	4730	4560	4 × 250 mL	

Rotor Profile and Description	Max RPM	Max RCF (× *g*)	Max Capacity	Rotor Manual Number
GA-6 Fixed Angle, 35° (6 place) r_{max} = 137 mm 	6100	5710	6 × 250 mL	GS-TB-023

SAFETY FEATURES

The centrifuge has been designed and tested to operate safely indoors at altitudes up to 2 000 m (6 562 ft). Safety features include the following.

- The door has an electromechanical door-locking mechanism and a secondary (manual) lock to prevent operator contact with spinning rotors. When the door is closed it locks automatically. It can be unlocked only by pressing the DOOR switch to OPEN, and opened only when the power is on, the rotor is at rest, and the manual lock is in the UNLOCK position. Two independent monitoring systems prevent the door from opening if the rotor is spinning.

- An imbalance detector monitors the rotor during the run, causing automatic shutdown if rotor loads are severely out of balance. At low speeds, an incorrectly loaded rotor can cause imbalance. Rotor instability can also occur if the centrifuge is moved while running, or if it is not resting on a level surface.

- An anchoring system is provided to secure the centrifuge in place. The anchoring system (bolts that anchor a benchtop centrifuge to the laboratory bench; a stationary tray to roll a kneewell centrifuge into for operation) is designed to minimize the possibility of injury or damage that could result from centrifuge movement in the event of a major rotor mishap.

NAME RATING PLATE

The name rating plate is affixed to the rear of the centrifuge. Check that the line voltage agrees with the voltage listed on this name rating plate before connecting the centrifuge. Always mention the serial number and the model number shown when corresponding with Beckman Coulter regarding your centrifuge (the serial number is also on the inside of the door).

CHASSIS

HOUSING

The centrifuge housing is made of sheet steel over a steel chassis and is finished with acrylic baking enamel. The control panel overlay is made of coated polycarbonate. Polyvinyl chloride and polyester foam panels line the interior walls of the centrifuge housing for sound and temperature insulation.

DOOR

The structural steel door has a strobe port for speed verification. In nonrefrigerated models, the door has two filtered air-intake ports for rotor cooling. An electromechanical door lock system, together with a manual lock, prevents run initiation unless the door is closed and latched. When a run is in progress, the door locks automatically and can not be opened unless the power is on, the rotor is virtually stopped (spinning less than 40 rpm), and the manual lock is in the UNLOCK position. If there is a power failure, the door lock can be manually tripped for sample recovery (see Section 4, TROUBLESHOOTING).

ROTOR CHAMBER

The aluminum rotor chamber (Figure 1-2) is coated with a chemical-resistant epoxy finish. The drive shaft and neoprene rubber boot surrounding the drive shaft are visible in the chamber bottom. A neoprene gasket around the chamber top assures sealing. (Centrifuge gaskets have not been designed as bioseals for aerosol containment.) The thermistor is also visible in refrigerated models.

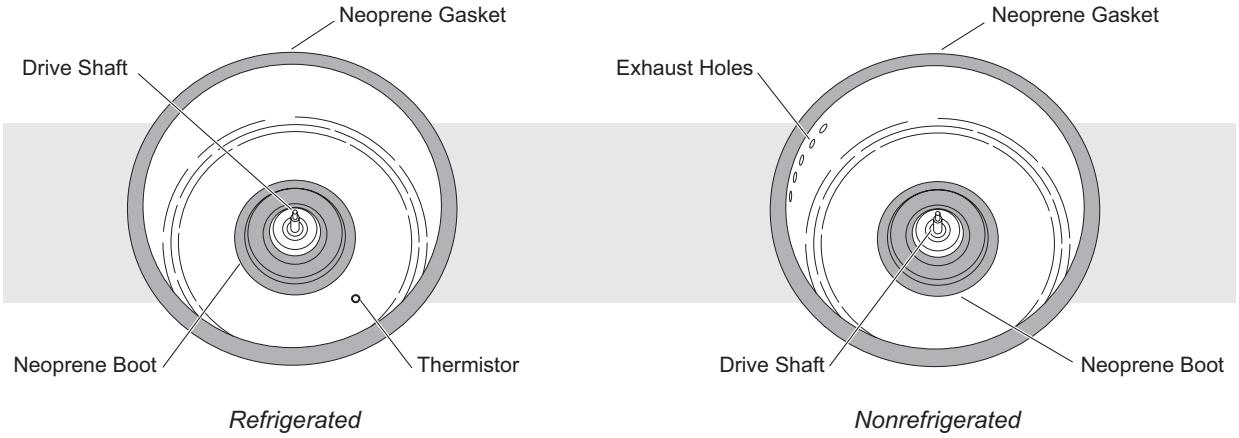


Figure 1-2. Interior View of the Centrifuge

Nonrefrigerated models only—During centrifugation, the rotor movement draws air through the filtered air-intake ports in the door into the chamber bowl, where it circulates around the rotor. Holes in the side of the bowl allow air to flow out to the exhaust ports beneath the centrifuge. This air flow provides cooling for the rotor.

DRIVE

The direct-drive motor has permanently lubricated, sealed bearings. A tie-down screw (or rotor knob) secures the rotor to the drive shaft. The resilient suspension ensures that loads will not be disturbed by vibration, and prevents damage to the drive shaft if an imbalance occurs during centrifugation.

REFRIGERATION SYSTEM (Refrigerated Models Only)

A refrigeration compressor circulates CFC-free refrigerant through copper tubing wrapped around the chamber bowl, which is insulated to increase refrigeration efficiency. A thermistor regulates the compressor to maintain chamber temperature to ±2°C of set temperature.

NOTE

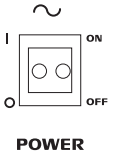
To avoid chamber icing, refrigeration is off when the door is open. The centrifuge door must be closed *and locked* for the refrigeration system to begin operating.

CONTROLS AND INDICATORS

CONTROL PANEL

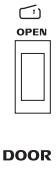
Mounted at an angle on the centrifuge front for easy visibility and access, the control panel (Figure 1-3, nonrefrigerated model; Figure 1-4, refrigerated models) comprises indicators, control knobs, and switches.

POWER



This two-position rocker switch, labeled I (ON) and O (OFF), controls electrical power to the centrifuge. The switch lights up when the power is on.

DOOR



When pressed to OPEN, this toggle switch releases the latch mechanism and allows the door to be opened (the rotor must be stopped, the power must be on, and the manual lock in UNLOCK position).

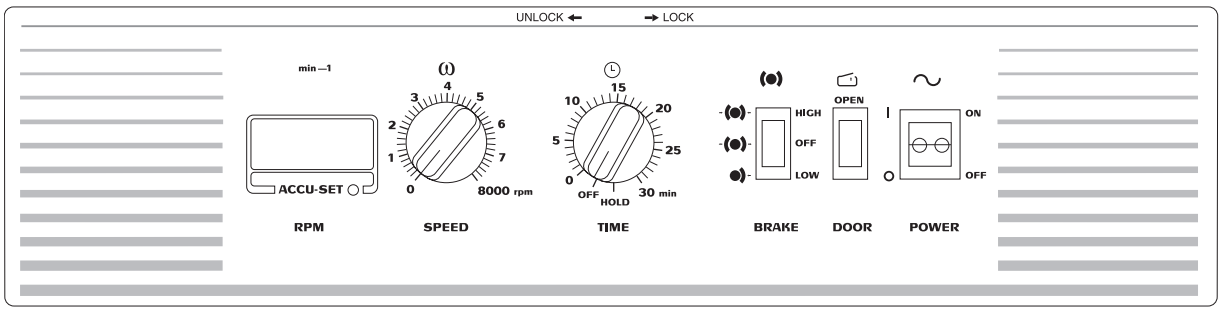


Figure 1-3. The Control Panel (Nonrefrigerated Model)

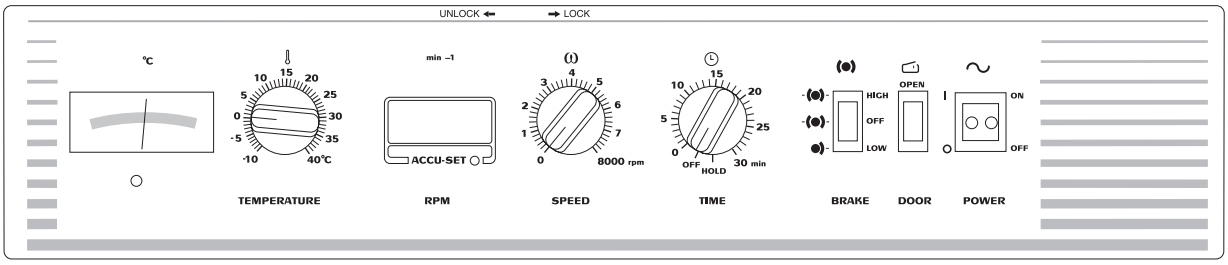
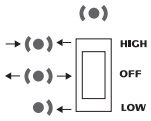


Figure 1-4. The Control Panel (Refrigerated Models)

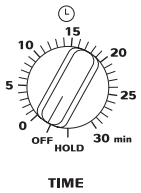
BRAKE



This switch is used to select the brake mode used during deceleration. Refer to the appropriate rotor manual for acceleration and deceleration times for available rotors under various conditions. The three positions of the switch provide:

- HIGH position activates high dynamic braking that starts immediately after the timer turns the motor off. When rotor speed reaches 50 rpm, all braking stops and the rotor coasts to a stop.
- OFF removes braking entirely and allows the rotor to coast to a stop from set speed.
- LOW position activates low dynamic braking down to 50 rpm, and is used for slower deceleration to avoid remixing or resuspension of the sediment.

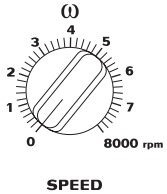
TIME



This variable-setting knob may be set for timed runs or longer-duration continuous runs. Either type of run can be stopped at any time by switching the timer to OFF.

- Timed runs—the knob may be set for any run time up to 30 minutes in 1-minute increments.
- Continuous runs—with the knob set to HOLD, the centrifuge will run until turned off.

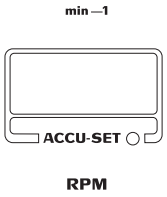
SPEED



The variable-setting knob is used to set the drive speed, in 200-rpm increments, up to 8000 rpm. For precise speed adjustments, the ACCU-SET button can be pressed as the speed knob is turned until the required speed appears on the RPM display. The centrifuge will accelerate to the set speed and maintain that speed for the duration of the run.[1] ACCU-SET can be adjusted at any time during a run.

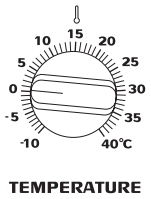
[1] Actual speed may fluctuate due to line voltage variation.

RPM



When centrifuge power is turned on, the display shows "0000." During the run the display indicates actual rotor speed to the nearest 10-rpm increment. If the run is shut down prematurely due to one of four conditions (see Section 4, TROUBLESHOOTING), the diagnostic message "8880" will be displayed.

TEMPERATURE (refrigerated models only)

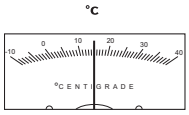


This knob is used to set the operating temperature between –10 and +40°C in 1°C increments. (Recommended operating temperature range is from –5 to +25°C.) A thermistor in the chamber regulates the compressor to maintain chamber temperature ±2°C of the set temperature.[2]

NOTE

Longer continuous runs are required to achieve temperatures higher than 25°C.

°C (refrigerated models only)

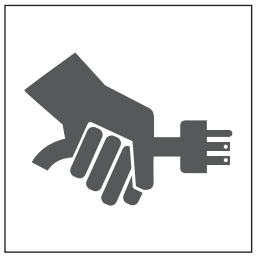


Displays the temperature (±2°C) within the chamber bowl.

[2] Temperature control is referenced for 25°C ambient; temperature performance at higher ambient will depend on the rotor in use and environmental conditions.

2

Installation Requirements



WARNING

This centrifuge weighs 51.7 kg/114.0 lb (nonrefrigerated benchtop), 75.8 kg/167.0 lb (refrigerated benchtop), or 90.3 kg/199.0 lb (refrigerated kneewell). DO NOT attempt to lift or move it without assistance from another person.

WARNING

Do not place the centrifuge near areas containing flammable reagents or combustible fluids. Vapors from these materials could enter the centrifuge's air system and be ignited. Never bring any flammable substances within the 30-cm (1-ft) area surrounding the centrifuge. Maintain a clearance envelope of 7.6 cm (3 in.) around an operating centrifuge. No persons should be within this clearance envelope while the centrifuge is operating.

SPACE AND LOCATION REQUIREMENTS

Carefully remove the centrifuge and accessories from the shipping container. Save the container and packing materials for possible future relocation or storage of the centrifuge.

- Select a location away from heat-producing laboratory equipment, with sufficient ventilation to allow for heat dissipation.
- Position the centrifuge on a level surface (a sturdy table or laboratory bench for benchtop models) that can support the weight of the centrifuge (refer to SPECIFICATIONS in Section 1) and resist vibration.
- Allow a 7.6-cm (3-in.) clearance at each side and the back of the centrifuge to ensure sufficient air circulation. Dimensions are shown in Figure 2-1. The centrifuge must have adequate air ventilation to ensure compliance to local requirements for vapors produced during operation.
- Do not operate the centrifuge in ambient temperatures exceeding 35°C (95°F). Relative humidity should not exceed 95% (noncondensing).

Use the appropriate anti-rotation kit to secure the centrifuge to the working surface. The anti-rotation kit is designed to minimize the possibility of injury or damage that could result from centrifuge movement in the event of a rotor mishap.

- The anchoring kit for a benchtop centrifuge contains bolts to secure the centrifuge to the table or bench. Complete instructions (SP-TB-007) for installing the anti-rotation kit are included with the kit, which is shipped with the centrifuge.
- The anchoring kit for a kneewell centrifuge contains a stationary tray to roll the centrifuge into for operation. Complete instructions (GS6-TB-007) for installing the anti-rotation kit are included with the kit, which is shipped with the centrifuge.

ELECTRICAL REQUIREMENTS

Allegra 6	Allegra 6R/ Spinchron R	Allegra 6KR
120 VAC, 8 A, 60 Hz	120 VAC, 12 A, 60 Hz	120 VAC, 12 A, 60 Hz
230 VAC, 4 A, 50 Hz	230 VAC, 8 A, 50 Hz	230 VAC, 8 A, 50 Hz
100 VAC, 10 A, 50/60 Hz	200 VAC, 10 A, 50/60 Hz	200 VAC, 10 A, 50/60 Hz

A 1.8-m (6-ft) power cord with grounded plug is supplied with the centrifuge. In regions where a different plug is required to meet local electrical and safety requirements, contact your local Beckman Coulter representative.

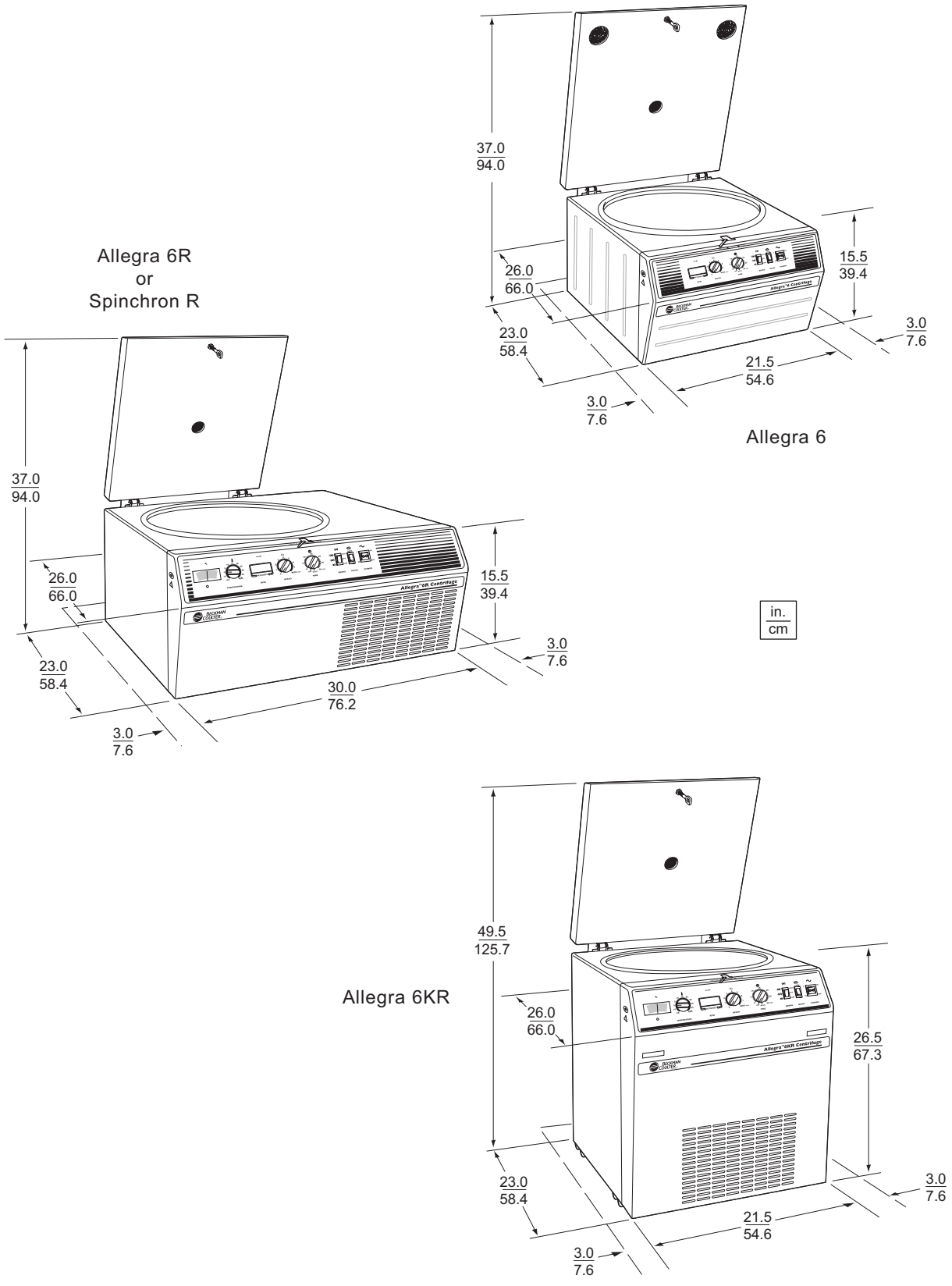


Figure 2-1. Centrifuge Dimensions